

WHAT IS CLAIMED IS:

1. A flow resistance setting nozzle comprising
a metallic block having formed therethrough a pipe receiving
through-bore;
5 a metallic pipe for forming a flow path which is inserted in the pipe
receiving through-bore;
a pressing member in the form of a rectangular cross-section bar
orthogonally abutting at a center position thereof with the pipe at a first abut
portion thereof ;
10 a coarse adjustment screw mounted in the metallic block to press the
pressing member at the center position thereof against the metallic pipe by a
coarse adjustment force generated by the coarse adjustment screw ;
an anvil having a distal end and mounted in the metallic block at a
position opposite to the coarse adjustment screw such that the distal end of
15 the anvil abuts the metallic pipe at a second abut portion thereof which is
opposite to the first abut portion where the pipe abuts with the pressing
member so that the pipe is received by and interposed between the pressing
member and the anvil, whereby the pipe is squeezed by a coarse amount
according to coarse adjustment force generated by the coarse adjustment
20 screw;
two fine adjustment screws mounted in the metallic block
to press the pressing member at two symmetrically distant positions thereof
which locate with substantially equal distances in longitudinally opposite
directions of the pressing member from the center position thereof against
25 the metallic pipe by a fine adjustment force which is obtained from
combination of respective pressing forces generated by the respective fine
adjustment screws and which is additive to the coarse pressing force

generated by the coarse adjustment screw, whereby the pipe is further squeezed by a fine amount according to the fine adjustment force; and

seal means for forming seals between the outer peripheral surface of the metallic pipe and the inner peripheral wall of the pipe receiving through-bore formed in the metallic block.

2. The flow resistance setting nozzle according to claim 1, wherein the metallic block has a pressing member receiving bore which is formed therein to orthogonally intersect the pipe receiving through-bore, the pressing member is inserted in the pressing member receiving bore such that the pressing member orthogonally abuts with the pipe at the first abut portion.

3. The flow resistance setting nozzle according to claim 1, wherein each of the fine adjustment screws has a head portion and a threaded shank portion;

the pressing member has two through-apertures formed therethrough at the two symmetrically distant positions for loosely receiving the threaded shank portions of the corresponding fine adjustment screws therethrough; and

the metallic block having two threaded holes which are coaxial with the two through-apertures and in which the threaded shank portions of the corresponding fine adjustment screws are threaded;

whereby the fine adjustment force is obtained from combination of the respective pressing forces imparted by the head portions of the fine adjustment screws to the pressing member as the threaded shank portions of the fine adjustment screws loosely fitted in the through-apertures of the

pressing member are threaded into the threaded holes in the metallic block.

4. The flow resistance setting nozzle according to claim 2, wherein each of the fine adjustment screws has a head portion and a threaded
5 shank portion;

the pressing member has two through-apertures formed therethrough at the two symmetrically distant positions for loosely receiving the threaded shank portions of the corresponding fine adjustment screws therethrough; and

- 10 the metallic block having two threaded holes which are coaxial with the two through-apertures and in which the threaded shank portions of the corresponding fine adjustment screws are threaded;

- whereby the fine adjustment force is obtained from combination of the respective pressing forces imparted by the head portions of the fine
15 adjustment screws to the pressing member as the threaded shank portions of the fine adjustment screws loosely fitted in the through-apertures of the pressing member are threaded into the threaded holes in the metallic block.

5. The flow resistance setting nozzle according to claim 3, wherein
20 each of the threaded shank portions of the fine adjustment screws has a diameter smaller than that of a threaded shank portion of the coarse adjustment screw.

6. The flow resistance setting nozzle according to claim 4, wherein
25 each of the threaded shank portions of the fine adjustment screws has a diameter smaller than that of a threaded shank portion of the coarse adjustment screw.

7. The flow resistance setting nozzle according to claim 1, wherein
the distal end of the anvil has an arcuate surface with a top ridge thereof
oriented in a direction orthogonal to the longitudinal direction of the pipe so
5 that the arcuate surface of the anvil intersects the cylindrical peripheral
surface of the pipe as the second abut portion.

8. The flow resistance setting nozzle according to claim 2, wherein
the distal end of the anvil has an arcuate surface with a top ridge thereof
10 oriented in a direction orthogonal to the longitudinal direction of the pipe so
that the arcuate surface of the anvil intersects the cylindrical peripheral
surface of the pipe as the second abut portion.

9. The flow resistance setting nozzle according to claim 1, wherein
15 the metallic block has a coarse threaded hole and two screwdriving
apertures formed therein, and
the respective head portions of the coarse adjustment screw and two fine
adjustment screws are recessed in the coarse threaded hole and the two
screwdriving apertures formed in said metallic block, respectively.

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10. The flow resistance setting nozzle according to claim 2, wherein
the metallic block has a coarse threaded hole and two screwdriving apertures
formed therein, and
the respective head portions of the coarse adjustment screw and two fine
25 adjustment screws are recessed in the coarse threaded hole and the two
screwdriving apertures formed in said metallic block, respectively.

11. The flow resistance setting nozzle according to claim 3, wherein the metallic block has a coarse threaded hole and two screwdriving apertures formed therein, and

the respective head portions of the coarse adjustment screw and two fine adjustment screws are recessed in the coarse threaded hole and the two screwdriving apertures formed in said metallic block, respectively.

12. The flow resistance setting nozzle according to claim 4, wherein the metallic block has a coarse threaded hole and two screwdriving apertures formed therein, and

the respective head portions of the coarse adjustment screw and two fine adjustment screws are recessed in the coarse threaded hole and the two screwdriving apertures formed in said metallic block, respectively.

13. The flow resistance setting nozzle according to claim 5, wherein the metallic block has a coarse threaded hole and two screwdriving apertures formed therein, and

the respective head portions of the coarse adjustment screw and two fine adjustment screws are recessed in the coarse threaded hole and the two screwdriving apertures formed in said metallic block, respectively.

14. The flow resistance setting nozzle according to claim 6, wherein the metallic block has a coarse threaded hole and two screwdriving apertures formed therein, and

the respective head portions of the coarse adjustment screw and two fine adjustment screws are recessed in the coarse threaded hole and the two screwdriving apertures formed in said metallic block, respectively.

15. The flow resistance setting nozzle according to claim 7, wherein the metallic block has a coarse threaded hole and two screwdriving apertures formed therein, and

5 the respective head portions of the coarse adjustment screw and two fine adjustment screws are recessed in the coarse threaded hole and the two screwdriving apertures formed in said metallic block, respectively.

16. The flow resistance setting nozzle according to claim 8, wherein the
10 metallic block has a coarse threaded hole and two screwdriving apertures formed therein, and

the respective head portions of the coarse adjustment screw and two fine adjustment screws are recessed in the coarse threaded hole and the two screwdriving apertures formed in said metallic block, respectively.

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17. A flow resistance setting nozzle comprising
a metallic block having formed therein

a pipe receiving through-bore,
a pressing member receiving bore,
20 a coarse threaded hole,
two screwdriving apertures,
two fine threaded holes, and
an anvil mounting bore;

a metallic pipe for forming a flow path;

25 a pressing member;

an anvil;

a coarse adjustment screw;

two fine adjustment screws; and
seal means;

wherein

the pressing member receiving bore is extended to orthogonally intersect to
5 the pipe receiving through-bore;

the coarse threaded hole is extended to orthogonally intersects to the
pipe receiving through-bore and the pressing member receiving bore;

the anvil mounting bore is extended to orthogonally intersect to the pipe
receiving through-bore in opposition to the coarse threaded hole;

10 the two screwdriving apertures are extended in parallel to the coarse
threaded hole to orthogonally intersect to the pressing member receiving
bore at symmetric positions with respect to the coarse threaded hole;

the two fine threaded holes are extended coaxially with the two
screwdriving apertures to orthogonally intersect to the pressing member
15 receiving bore;

the metallic pipe is inserted in the pipe receiving through-bore;

the pressing member is in the form of a rectangular cross-section bar
having two spaced through-apertures at symmetric positions with respect to
its center position and is inserted in the pressing member receiving bore to
20 orthogonally abut at the center position thereof with the metallic pipe at a
first abut portion thereof;

the anvil is inserted in the anvil mounting bore to support the metallic pipe
at a second abut portion opposite to the first abut portion as the pipe is
pressed by the pressing member;

25 the coarse adjustment screw is threaded in the coarse threaded hole to
press the pressing member at the center position thereof by a coarse
adjustment force generated by the coarse adjustment screw against the

metallic pipe to thereby squeeze the pipe by a coarse amount according to the coarse adjustment force;

5 each of the two fine adjustment screws comprises a head portion and a threaded shank portion which is loosely fitted in each the through-aperture in the pressing member and threaded into each of the two fine threaded holes to impart a further fine pressing force to the pressing member to thereby further squeeze the metallic pipe by a fine amount according to a fine adjustment force obtained from combination of the respective pressing forces generated by the respective fine adjustment screws; and

10 the seal means forms air-tight sealing which allows the metallic pipe to be coupled to outer equipment outside of the metallic block.